ATOMIC INFLATION, THE ENGINE OF GRAVITY ?

by François Leblanc, August 14, 2026

Newton defined the how much, Einstein the why, the how remains.

Einstein's theory of gravitation relies on the curvature of spacetime to explain the “attraction” of objects in proportion to their masses. In order to respond to the objection of immediate action, this curvature or deformation is defined without universal time but locally, via Einstein tensor.

As there is no universal time, we are mainly seeking a spatial deformation that has the apparent effect of reducing the distance between objects. However, according to another point of view, it is indeed on the object itself that it can act, for example via the scale or magnification phenomenon.

If one were to apply such a uniform scale change to two objects fixed relative to each other, the distance between them would indeed decrease.

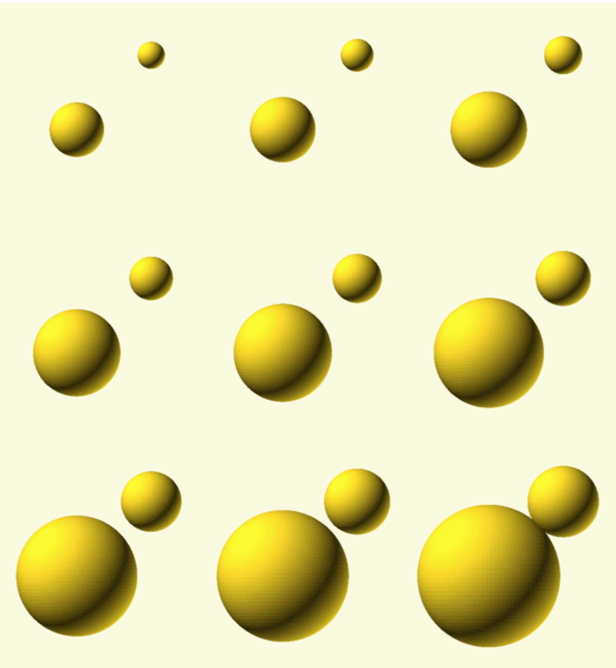

Figure 1: Effect obtained without any linear displacement

Below is the OpenSCAD code used to generate an animation during which one clearly observes the total absence of translation between the two spheres, and yet they move closer.

```
r1 = 5;
r2 = r1/2;

$fn = 100;

Te = 1 + (2 *$t);

scale([1/1, 1/1, 1/1]) {

    scale([1*Te, 1*Te, 1*Te])
        sphere(r1);

    translate([15, 0, 15])
        scale([1*Te, 1*Te, 1*Te])
            sphere(r2);

}
```

Quite obviously, we would notice this magnification in our observations unless the phenomenon causing this effect also applied to the observer or to the measuring device. Indeed, increase an object by a certain percentage and apply this same increase to the ruler that allows its measurement: you will then notice no apparent change in size.

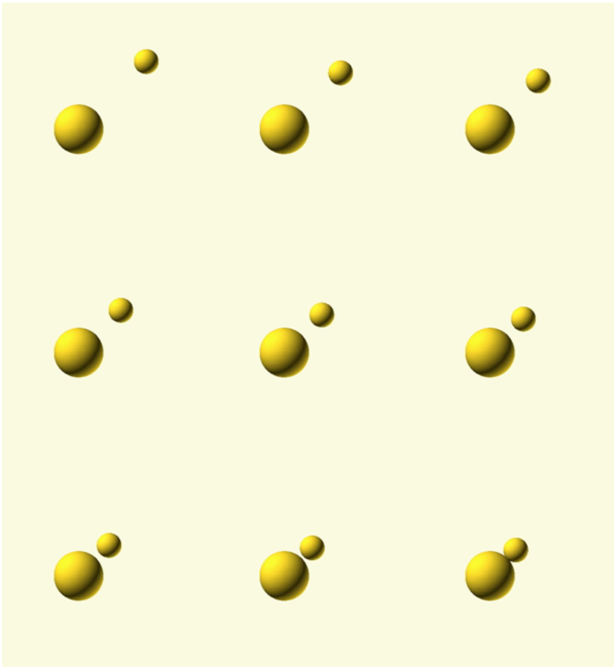

Figure 2: Effect obtained without any linear displacement

Below is the OpenSCAD code used to generate an animation during which one clearly observes the total absence of translation between the two spheres: only a change of scale is applied to the objects and to the observer, thus the two spheres seem to get closer.

```
r1 = 5;
r2 = r1/2;
```

```
$fn = 100;

Te = 1 + (2 *$t);

scale([1/Te, 1/Te, 1/Te]) {

    scale([1*Te, 1*Te, 1*Te])
        sphere(r1);

    translate([15, 0, 15])
        scale([1*Te, 1*Te, 1*Te])
            sphere(r2);

}
```

What phenomenon could explain this magnification applying both to the observed objects and to the observers themselves? The raw material of the universe being made up of atoms, it is reasonable to think of an atomic expansion, which would result in a magnification effect respecting our criterion: application both to objects and to their observers.

What could be the order of magnitude of this atomic inflation:

To correspond to an acceleration of $g = 9.81\ \mathrm{m} \cdot \mathrm{s}^{-2}$, the terrestrial expansion would be

$\left(\frac{3}{2}\right)R_T^2 g \cdot t^2 + \left(\frac{3}{4}\right)R_T g^2 \cdot t^4 + \left(\frac{1}{6}\right)g^3 \cdot t^6 + \left(\frac{4}{3}\right)\pi R_T^3$

That is approximately $6 \times 10^{14} \cdot t^2 + 4.6 \times 10^8 \cdot t^4 + 157.34 \cdot t^6 + 1.7 \times 10^{14}$

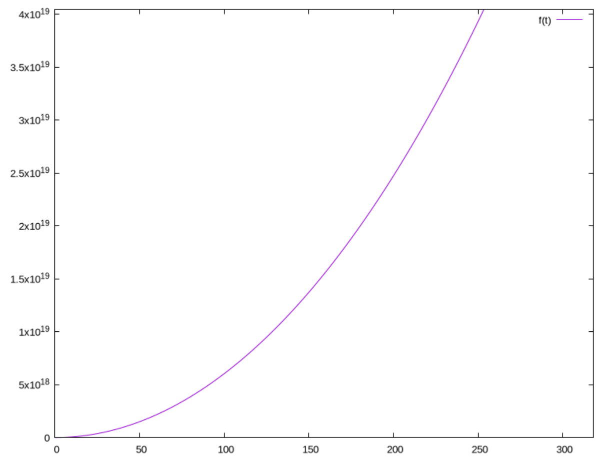

Figure 3: $6 \times 10^{14} \cdot t^2 + 4.6 \times 10^8 \cdot t^4 + 157.34 \cdot t^6 + 1.7 \times 10^{14}$

With an approximate number of 10^{50} atoms, we obtain an expansion per atom of:

$$\frac{6 \times 10^{14} \cdot t^2 + 4.6 \times 10^8 \cdot t^4 + 157.34 \cdot t^6 + 1.7 \times 10^{14}}{10^{50}}$$

That is an extremely small inflation of the atom.

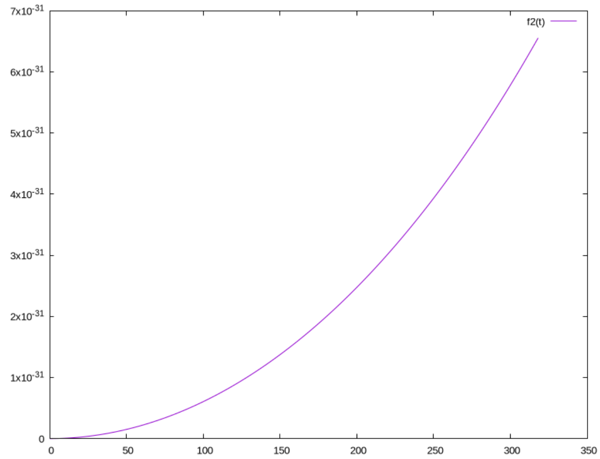

Figure 4: $\frac{6 \times 10^{14} \cdot t^2 + 4.6 \times 10^8 \cdot t^4 + 157.34 \cdot t^6 + 1.7 \times 10^{14}}{10^{50}}$

Of course, this is a flawed approach since all our measurements would themselves be inaccurate because the inflation of the atom also affects the measuring device and the observer exactly like the measured phenomenon. Only a colossal overhaul of the calculations taking this inflation into account would make it possible to validate or consolidate this hypothesis.

Before being able to address any theoretical consolidation, one can examine the implications that such a concept could have on the phenomena we currently observe and determine if this idea is intuitively justified before giving concrete body to the theory of atomic inflation.

This video https://tygerlord.github.io/gravity/gravity.html made with the OpenSCAD script below is stunning regarding the effect obtained. One can see on the left the real magnification and on the right the apparent magnification when one applies the same magnification to the observer.

```
r1 = 5;
r2 = r1/2;

$fn = 100;

Te = 1 + (2 *$t);
```

```
translate([-30, 0, 0]) {

    scale([1/1, 1/1, 1/1]) {

        scale([1*Te, 1*Te, 1*Te])
            sphere(r1);

        translate([15, 0, 15])
            scale([1*Te, 1*Te, 1*Te])
                sphere(r2);


    }

    rotate([90,0,0])
        translate([0, -20, 0])
            color("black")
                text("Reality", size=2,
halign="center");

}


translate([15, 0, 0]) {

    scale([1/Te, 1/Te, 1/Te]) {


        scale([1*Te, 1*Te, 1*Te])
            sphere(r1);

        translate([15, 0, 15])
            scale([1*Te, 1*Te, 1*Te])
            sphere(r2);

    }

    rotate([90,0,0])
        translate([0, -20, 0])
            color("black")
                text("Observed", size=2,
halign="center");

}
```

The relative simplicity

The most interesting thing in this theory, I find, is its relative simplicity concerning the explanation of the apparent approach between two objects. This approach involves no force, no universal time, no particular geometry of spacetime, nor any particle. In this sense, it is a simple explanation whose simulation corresponds exactly to observation.

It should be noted that the effect is completely reversible and that a contraction of atoms would cause objects to move apart.

Many questions remain to be solved, however. For example: what could explain why atoms grow or contract? Is the expansion of these atoms uniform in the universe or can it vary according to spatial regions? Can it be completely variable and generate atoms of different sizes across spatial regions?

The engine of atomic inflation?

What could be the engine of atomic inflation? A uniformly accelerated linear motion generated by the difference in mass between the electrons and the nucleus, a displacement that would rebalance the electron cloud by increasing its average distance to the nucleus. Is there not a transfer of a part of the atomic kinetic energy towards the electron cloud to respect Heisenberg's uncertainty principle: $\Delta x \Delta p > \frac{\hbar}{2}$?

Expansion of the universe or of matter

A first consequence would be to invert our perspective: the universe would not be expanding, but rather the matter it contains would effectively be expanding. Could this explain the differences observed when measuring the expansion rate of the universe using local or cosmological methods? Obviously.

Dark mass and dark energy

Most of the universe's energy and mass seems to be missing, but in fact, is it not hidden within already existing atoms, inaccessible to our measurements?

Quantum effects

It is in the realm of quantum physics that this theory could provide some explanations for observed phenomena.

- The measurement problem

It is conceivable that measuring a phenomenon of tiny expansion, using a device itself subject to the same type of expansion, would yield inconsistent results under these conditions.

- Quantum decoherence

The effect of expansion on a single atom is infinitesimal, but when multiplied by a vast number of bound atoms, it becomes massively significant. Thus, while the shift in position resulting from the expansion of a single atom can noticeably disrupt its physical location, having this location affected simultaneously across all atoms renders this configuration far more predictable and consistent with the measuring devices used to observe this cluster of atoms.

- Heisenberg's uncertainty principle

Heisenberg's uncertainty principle perfectly expresses the relationship between the expansion (and thus the position) of the atom and its kinetic energy or momentum. If a continuous expansion phenomenon exists, it proves difficult to precisely determine both simultaneously without a fundamental contradiction in the expected results.

The characteristics of my universe

- The universe is not expanding: it is fixed and already present, but the atoms it contains are.
- Atoms that undergo uniform acceleration or deceleration create a different displacement of the nucleus, continuously reconfiguring the electron cloud and thus the size of the atom. There is a transformation of kinetic energy into an infinitesimal volumetric mass, which is amplified by the astronomical quantity of atoms making up the object.
- The gravitational effect is produced by the expansion or contraction of atoms, but it remains transparent to the observer if they themselves are subject to the same deformation. In the event of relative acceleration, objects move closer together; in the event of deceleration, objects move apart.
- The expansion (or contraction) of the atom is compatible with quantum physics, which implies an immediate effect, as well as with classical physics. Indeed, if an object grows, the physical distance separating it from another object decreases (or increases) instantaneously without violating the speed limit of information. This constitutes a quantum gravity that is added to the apparent gravity linked to acceleration.
- Atoms grouped into objects are subject to the same deformation. Objects experiencing different accelerations or decelerations, and thus having different velocities, possess a different local apparent time.
- Quantum decoherence is obtained when atoms are sufficiently numerous or have sufficient density to mask the effects of expansion (or contraction). Interlocking atoms will mutually constrain each other as they expand (or contract), whereas an isolated atom will remain mobile in space.

Conclusion

Atomic inflation as the driving principle of gravity offers an interesting perspective due to its simplicity in explaining this macroscopically observable phenomenon. This approach simultaneously opens up prospects for a better understanding of quantum mechanisms. In my view, it is therefore essential to establish concrete evidence that would confirm this atomic inflation.

It is worth highlighting the prior work conducted by C. Cahen [1], which rests on a concept substantially similar to the approach proposed in this paper —namely, matter expansion as the source of gravitation.

Bibliography

[1] C. Cahen, "The Proton's Inner Energy, Entropy and Pressure Is the Source of All Baryonic Matter Expansion: It Elucidates What We Call Gravitation," [Online]. Available: https://www.academia.edu/170354846/The_Protons_Inner_Energy_Entropy_and_Pressure_Is_the_Source_of_All_Baryonic_Matter_Expansion_It_Elucidates_What_We_Call_Gravitation